

Application No.: 10/729,322

Docket No.: JCLA12520

REMARKS**I. Present Status of the Application**

The Office Action objected the specification because of non-descriptiveness of the title and because of informalities; rejected claims 1 and 2 under 35 U.S.C. § 112, ¶ 2, as being indefinite; rejected claim 1 under 35 U.S.C. § 102(b) as being anticipated by Powell et al. (US 6,117,356); and rejected claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Powell et al. in view of "Guidelines for the use of Hydrocarbon Refrigerants in Static Refrigeration and Air Conditioning Systems" (ACRIB).

Upon entry of the amendments in this response, the title of the invention, the specification, and claims 1 and 2 are amended. The amendments of claims 1 and 2 are supported necessarily by, for example, specification, in paragraph [0012]. Applicants believe that the foregoing amendments do not introduce new matter. Thus, reconsideration of those claims is respectfully requested.

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II. Response to Objections and Rejections

A. Objection to the specification

The Office Action objected the specification. The Examiner states that the title of the invention is not descriptive. Also, the Examiner requires Applicants to make change of the recitation of "carbon oxide" on page 2, line 17 of the specification. In accordance with the Examiner's requests, Applicants have changed the title of the invention and changed "carbon oxide" to "carbon dioxide." Accordingly, Applicants respectfully submit that the objection has been overcome and should be withdrawn.

B. Rejections under 35 U.S.C. 112, ¶ 2

The Office Action rejected claims 1 and 2 under 35 U.S.C. § 112, ¶ 2, as being indefinite. The Examiner asserts that there is not clear definition in the disclosure for the term "combustible nature refrigerant" recited in the claims. Applicants respectfully submit that the term "natural" here has its common meaning of "manufactured from organic matter or obtained from nature." As a matter of clarity, Applicants amended the specification, in paragraph [0018] by inserting "non-fluorinated" before "hydrocarbons."

Applicants therefore respectfully submit that the grounds of rejections have been addressed and the rejections overcome. Reconsideration and withdrawal of the rejections are respectfully requested.

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C. Rejections under 35 U.S.C. § 102(b)

The Office Action rejected claim 1 under 35 U.S.C. § 102(b) as being anticipated by Powell et al. (US 6,117,356). Applicants respectfully traverse the rejection as applied to the amended claims for at least the reasons set forth below.

To anticipate a claim, the prior art reference must teach each and every element of the claim. M.P.E.P. § 2131.

Claim 1, as amended, recites as follows.

1. (currently amended) A refrigerating device, wherein a compressor, a gas cooler, an expansion mechanism and an evaporator are sequentially connected by using refrigerant pipes, characterized in that the refrigerating device uses a refrigerant mixture consisting essentially of a combustible nature refrigerant and a carbon dioxide refrigerant, wherein an amount of the carbon dioxide refrigerant in the refrigerant mixture is 20 to 50 mass %.

(Emphasis added). Please note that the refrigerant mixture “consists essentially of” the combustible nature refrigerant and carbon dioxide; which excludes any other “essential” component in the mixture.

Powell et al., however, is directed to a refrigerant mixture containing “carbon dioxide, [and] at least one hydrofluorocarbon” (abstract). The hydrofluorocarbon is an essential component in the mixture (column 2, line 10 through column 3, line 28), even though “butane and pentane” can be included “in an amount of from 1 to 10% by weight on the total weight of the composition” (column 4, lines 35-46).

Therefore, Powell et al. do not anticipate claim 1, as amended, since Powell et al. do not disclose each and every element of the claim. Accordingly, Applicants respectfully submit that

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the grounds of rejection have been addressed and the rejection has been overcome. Reconsideration and withdrawal of the rejection are respectfully requested.

H. Rejections under 35 U.S.C. § 103(a)

The Office Action rejected claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Powell et al. in view of ACRIB. Applicants respectfully traverse the rejection as applied to the amended claims for at least the reasons set forth below.

In determining the differences between the prior art and the claimed invention, the question under 35 U.S.C. § 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. M.P.E.P. § 2141.

Claim 2, as amended, recites as follows.

2. (currently amended) A refrigerating device, wherein a compressor, a gas cooler, an expansion mechanism and an evaporator are sequentially connected by using refrigerant pipes, characterized in that the refrigerating device uses a refrigerant mixture consisting essentially of a combustible nature refrigerant and a carbon dioxide refrigerant, wherein a maximum fill amount of the combustible nature refrigerant is 150g.

(Emphases added). Similar to that discussed in the foregoing section, the claimed refrigerant mixture “consists essentially of” the combustible nature refrigerant and carbon dioxide; which excludes any other “essential” component in the mixture.

Powell et al., as disused above however, is directed to a mixture including at least one hydrofluorocarbon as an essential component therein. Thus, in the entirety, Powell et al., either

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alone or combined with ACRIB, directs to a refrigerant mixture significantly different from that of the claimed invention.

Therefore, claim 2 is not rendered obvious over the prior art references. Accordingly, Applicants respectfully submit that the grounds of rejection have been addressed and the rejection has been overcome. Reconsideration and withdrawal of the rejection are respectfully requested.

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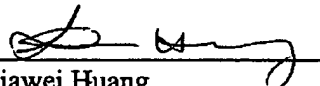
CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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